DOCUMENT RESUME

ED 095 576 CS 201 539

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TITLE Clozentropy as a Measure of International Communication Comprehension.
PUB DATE Aug 74
NOTE 27p.; Paper presented at the Annual Meeting of the Association for Education in Journalism (57th, San Diego, California, August 18-21, 1974)

EDRS PRICE MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS Audiences; *Cloze Procedure; *Communication (Thought Transfer); *Comprehension; English; Foreign Relations; Higher Education; Language Skills; *Monolingualism; *Research
IDENTIFIERS *Clozentropy

ABSTRACT

This study was designed to test the validity of Darnell's clozentropy procedure as a measure of monolignual international communication comprehension. The study investigated two major subject (audience) variables, "educational level" and "prior familiarity level" with the specialized (idiosyncratic) content with which the subjects were presented, and one major content variable, "idiosyncratic level." One 500-word passage was selected from each of two different international radio programs produced in America, by Americans, primarily for Americans, but also broadcast to audiences in other parts of the English speaking world. Four groups of Filipino subjects with known group characteristics were tested. The criterion group consisted of American subjects with known group characteristics. Seven a priori hypotheses concerning international communication comprehension were tested using multiple linear regression. The overall results of the study strongly supported the position that the clozentropy procedure is both a sensitive and a valid measure of international communication comprehension, and pointed out the importance to the international communicator of studying his various international audience subpopulations, even when the audiences are monolingual. (Author/RB)

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CLOZENTROPY AS A MEASURE OF INTERNATIONAL COMMUNICATION COMPREHENSION

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Presented at the annual convention of the Association for Education in Journalism, San Diego, August 18-21, 1974.

The authors are grateful to Far East Broadcasting Company, Manila, Philippines, and in particular to Priscilla R. Calica, for invaluable assistance in collecting the Philippine data. The views expressed herein are those of the authors and not necessarily those of FEBC.

CS 201 539

ABSTRACT

CLOZENTROPY AS A MEASURE OF INTERNATIONAL COMMUNICATION COMPREHENSION

An area of international communication research that has been largely overlooked is that of international communication comprehension ---the extent to which a message originating in one country is understood by receivers in another country. The present study was designed to test the validity of Darnell's clozentropy procedure as a measure of monolingual international communication comprehension. The study investigated two major subject (audience) variables and one major content variable. The two subject variables were education level and prior familiarity level with the specialized (idiosyncratic) content with which the subjects were presented. The content variable was idiosyncrasy level.

One 500-word passage was selected from each of two different international radio programs. These programs are produced in America, by Americans, primarily for Americans, and are then broadcast via shortwave and medium wave radio stations to secondary audiences in most parts of the English speaking world. Four groups of Filipino Ss with known group characteristics were tested. The criterion group consisted of American Ss with known group characteristics.

Seven a priori hypotheses concerning international communication comprehension were tested using multiple linear regression. The overall results of the study strongly supported the position that the clozentropy procedure is both a sensitive and a valid measure of international communication comprehension. The results pointed out the importance to the international communicator of studying his various international audience sub-populations, even when the international communication under consideration is monolingual. Clozentropy appears to have great potential for helping the international communicator do a better job of matching his messages to his audiences.

International communication, the transmission of messages from one country to another, has received considerable research attention. It has been studied from a propaganda analysis framework,[1] a persuasion/attitude change framework,[2] and a flow of information framework,[3] to mention only three. However, an area of research that has been largely overlooked is that of international communication comprehension---the extent to which a message originating in one country is understood by receivers in another country.

Propaganda analysis proceeds under the assumption that the messages will be understood to some extent, otherwise there would be little reason to bother analyzing the propaganda. Persuasion, in an attitude change sense, cannot take place if there is no comprehension. Likewise, information can "flow" from one country to another, but unless it can be comprehended when it gets there it is of little importance. Thus, the writers believe that the largely overlooked subject of communication comprehension is, in fact, one of the most important aspects of international communication.

While much international communication involves messages from

country A, in language X, which are translated and then transmitted to country B, in language Y, there are countless examples of true international communication which do not involve translation. Included would be international communication between: United States/ England, United States/Australia, Mexico/Argentina, Equador/Bolivia, Portugal/ Brazil, France/Haiti, and many other country dyads. However, even though the formal language of communication may be the same, is it reasonable to expect maximum comprehension when a message is transmitted from one national and cultural context to another? On an intuitive basis alone, probably not.

The objective of this article is to show how the recently-developed research method of clozentropy can be used to measure the amount of comprehension loss there is in monolingual international communication. The two countries involved in this study were the United States and the Philippines. The language involved was English. The test messages were taken from the radio sermons of two well-known American preachers whose radio programs are broadcast in both the United States and the Philippines.

Theoretical Background

The term "clozentropy" was coined by Darnell[4] to indicate a mergine of Taylor's[5] cloze procedure and an entropy measure derived from Shannon and Weaver's[6] information theory. Darnell's goal in developing clozentropy was to build an improved test to measure the English language proficiency of foreign students coming to the United States. One of his assumptions was that language norms vary from group to group, and the best measure of proficiency for an individual is in

terms of the group or groups with whom he needs to communicate.[7]

Operationally, both Taylor's cloze procedure and Darnell's clozentropy procedure begin in the same way. Both begin with the passages of prose to be studied and then delete words on either a random or a systematic basis. The deleted words are replaced with underlined blanks of identical size. The two procedures are also similar in the manner in which the tests are administered. Subjects are simply given the test material and instructed to write in the words that they think best fit the writer's original statements.

It is in the scoring procedures that Taylor's cloze procedure and Darnell's clozentropy procedure differ greatly. Cloze procedure scores subjects' responses on a right/wrong basis. A word is "right" if it is identical with the word originally used by the author. The assumption is that, "(a) the more readable a piece of writing is, the better understood it will be even if some words are left out, and (b) the better the writing is understood, the more likely it is that a reader can guess what words are missing."[8] The clozentropy scoring procedure does not compare subjects' responses against the writer of the passage. Instead, each subject's response to a given blank is compared against all of the responses placed in the same blank by the members of some criterion group of interest who have taken the same test. Thus, a subject's response is "right" to the degree that members of the criterion group agree that it is. Rather than measuring the degree to which an individual's responses are "right" or "wrong," then, clozentropy measures the degree to which his language norms are functional for communicating with the members of group B. Extending this concept one step further, a researcher can use

clozentropy to measure the degree to which a group of individuals from country A has language norms which are functional for communicating with a group from country B.

Instead of using Darnell's original scoring formula, however, the present study uses Reilly's[9] simplified scoring procedure:

Step 1. Compute for each blank the frequency, n_{ij}, of individuals in the criterion group choosing each response and record $\log_{10} n_{ij}$, which will be the scoring weight for that response.

Step 2. For each examinee in the new sample compute

$$T_k = \sum_{j=1}^{m} \log_{10} n_{ijk}$$

where the $\log_{10} n_{ijk}$ are weights associated with each response, obtained in Step 1. A zero weight is given to new responses since $\log_{10} 1 = 0$.[10]

Reilly's T score, while computationally simpler, is perfectly correlated with Darnell's D score and has the same reliability, validity, and correlation with other variables.

As mentioned above, Darnell's goal in developing clozentropy was to build an improved test for measuring the English language proficiency of foreign students coming to the United States to study. However, the present writers believe that the same basic procedures can be used to measure the comprehension level of individuals in any defined "receiver country," relative to the language norms of individuals in any defined "sender country." Likewise, clozentropy research would make it possible

to pretest several messages from the sender country to the receiver country, and determine which one has the highest comprehensibility level. There are numerous examples of international information or persuasion campaigns where clozentropy research might fruitfully be used to pretest messages on a sample of the entire population in the receiver country before disseminating them to the entire population.

Since clozentropy is a new research tool, it must undergo a period of rigorous validity and reliability testing before it can be widely accepted by the research community. However, very little clozentropy validation research has been published to date. In addition to Darnell's original article, the present writers are aware of only one other published study investigating the validity of clozentropy.

Connally and Knabe[11] compared the responses of Catholic priests (the criterion group) against the responses of a group of laymen on two types of content---sermon material and social-ecological material. As hypothesized, there was a significant difference in the way the priests and laymen responded to the sermon material. Howsver, the study is complicated by the finding that the priests and laymen also responded significantly differently to the social-ecological material ---where no difference was expected. Unfortunately, it is impossible to tell from the published article if this unexpected finding is due to the heterogeneous nature of the group of laymen (drawn from university students, the staffs of two hospitals, one Roman Catholic parish, and a Lutheran adult education class), whether the difference is due to a possible overall difference in education levels between the criterion group and the test group, or whether it is due to still other variables.

The present study, part of a larger study[12] which began in the spring of 1971, attempts to (1) provide a much more controlled and rigorous validity test of the clozentropy procedure than did the Connolly and Knabe study, and also (2) serve as a demonstration study of how the procedure can be used in "applied" field settings.

Variables and Hypotheses Used

This study investigates two major subject (audience) variables and one major content variable. The two subject variables are education level and prior familiarity level with the specialized (idiosyncratic) content with which the subjects were presented. The content variable was idiosyncrasy level. Exactly how these variables were operationalized will be explained below.

Since the subjects were drawn from known groups, and since the communication content presented them had known characteristics, the researchers were in a position to hypothesize what the comprehension levels "should" be if indeed the clozentropy procedure is as valid as it is claimed to be.

Hypothesis 1: Comprehension for the Hi Education Ss should be significantly higher than comprehension for the Lo Education Ss. Reason: The higher an individual's education level, the higher his message decoding and processing skills are likely to be. If the clozentropy procedure is valid, this difference in education levels of the Ss should be reflected in the comprehension scores.

Hypothesis 2: Comprehension for the Hi Prior Familiarity Ss should be significantly higher than comprehension for the Lo Prior Familiarity Ss. Reason: People generally perform better when they are

familiar with a task than when they are unfamiliar. If the clozentropy procedure is valid, this difference in prior familiarity levels of the Ss should be reflected in the comprehension scores.

Hypothesis 3: Comprehension on the Lo Idiosyncrasy passage should be significantly higher than on the Hi Idiosyncrasy passage. Reason: Lo Idiosyncrasy passages are, by definition, more similar to general everyday language usage, and are thus more familiar to the Ss. If content familiarity is important to comprehension, and if the clozentropy procedure is valid, this difference in idiosyncrasy levels of the passages should be reflected in the comprehension scores. This hypothesis is also suggested by Connolly and Knabe's post hoc data analysis which indicated that test items which were part of a scriptural quote, or which called for a specialized religious word, tended to lower the scores of laymen.[13]

Hypothesis 4: The multiplicative effect of Education Level X Prior Familiarity Level should be positively and significantly related to comprehension. Reason: Comprehension itself is theorized by the writers to be a complex phenomenon equal to more than the sum of its parts. Since Education Level and Prior Familiarity Level are considered to be two of the most important intra-subject variables relating to comprehension, they should produce an interaction effect greater than the sum of their separate effects. If this is so, and if the clozentropy procedure is valid, this interaction should be reflected in the comprehension scores.

Hypothesis 5: The multiplicative effect of Education Level X Idiosyncrasy Level should be positively and significantly related to

comprehension.[14] Reason: Same as for hypothesis 4.

Hypothesis 6: The multiplicative effect of Prior Familiarity Level X Idiosyncrasy Level should be positively and significantly related to comprehension. Reason: Same as for hypothesis 4.

Hypothesis 7: The multiplicative effect of Education Level X Prior Familiarity Level X Idiosyncrasy Level should be positively and significantly related to comprehension. Reason: Same as for hypothesis 4, except this is a three-way interaction.

METHOD

Two 30-minute religious radio programs were randomly selected from the extensive tape library maintained by Far East Broadcasting Campany, Manila, Philippines. One was randomly selected from the Billy Graham collection and the other was randomly selected from the Theodore Epp collection. Both programs are produced in America, by Americans, primarily for Americans, and are then broadcast via shortwave and medium wave radio stations to secondary audiences in most parts of the English speaking world. Both programs employ a music-and-sermon format.

One continuous 500-word passage was selected from each of the two sermons. The beginning point for each passage was the first sentence after the five minute point in each sermon. The passages were typed triple-spaced with every 10th word deleted and replaced with a standard-size underlined blank. Thus, for each passage there were 50 blanks. The passages were reproduced and assembled into test booklets in a random order to minimize any possible order effects. A one-page example of each of these passages is reproduced as Appendices A and B.

The Theodore Epp passage was defined as the Hi Idiosyncrasy passage, because it contained 310 "religious words" (biblical names, scripture verses, paraphrased scripture verses, etc.). These religious words could be considered idiosyncratic (specialized, unusual, or jargonistic) to an individual without prior familiarity with religious terminology. Included were such expressions as: let your loins be girded about; spiritual warfare; put on the whole armor of God that ye may be able to stand against the wiles of the devil; the Lord tarries. The Billy Graham passage was defined as the Lo Idiosyncrasy passage, because it contained only 115 religious words.

Four groups of Filipino Ss with known group characteristics were recruited:

Group 1: Lo Education/Lo Prior Familiarity---students from Manual Roxas High School, a public high school in Manila; students who were not known to the test administrator and the school guidance counselor to be active in any evangelical Protestant student groups and/or churches. Mean age: 15.9. Mean years of education: 9.0. (N = 23)

Group 2: Lo Education/Hi Prior Familiarity---students from Manuel Roxas High School who were personally known to the test administrator and the school guidance counselor to be active in evangelical Protestant student groups and/or churches. Mean age: 14.2. Mean years of education: 7.9. (N = 25)

Group 3: Hi Education/Lo Prior Familiarity---students from the University of the Philippines who were not known to the test administrator to be active in any evangelical Protestant student

groups and/or churches. Mean age: 21.0. Mean years of education: 14.0. (N = 24)

Group 4: Hi Education/Hi Prior Familiarity---students from the University of the Philippines who were members of Inter-Varsity Christian Fellowship, an evangelical Protestant student group. Mean age: 20.4. Mean years of education: 14.0. (N = 24)

The criterion group (N = 40), against which the responses of the Filipino Ss were compared, was defined as Hi Education/Hi Prior Familiarity/American. All criterion group members had at least four years of college, and all had been active in evangelical Protestant churches for at least one year.

Members of the criterion group and the test Ss were permitted a maximum of 15 minutes to fill in the 50 blanks in each passage. Most members of the criterion group did not need the full 15 minutes, while some members of the Lo Education test groups were not able to insert even guesses in all 50 blanks in 15 minutes. It was the judgment of the test administrator and the researchers that they would not have been able to finish even if the time had been doubled. Therefore, the 15-minute time limit was adhered to for the sake of test administration efficiency, and because their not being able to finish does provide some information about their comprehension level.

Test Ss were paid 3 pesos for their time and to insure a high level of motivation. This amount was equivalent to about 46 cents (US), but was worth considerably more than this in terms of buying power, and therefore incentive, in the Philippines. Members of the criterion group were not paid. Test Ss took the tests either individually on in groups

of varying size, depending upon whatever arrangements could be made.

Variant spellings of the same words were cleaned up to bring them into agreement (e.g., armour to armor). The justification for doing this is that two subjects obviously have the same meaning in mind, and have simply used two different spellings of the same word to express it. All data were card-punched for computer analysis. The clozentropy scoring was performed by an original computer program written in PL1 by Theodore J. Marr. This program provides both printed and punched output of the T scores for each subject on each passage. This punched output was then used as the data input in an hypothesis-testing multiple linear regression program to test the seven hypotheses stated above. An alpha level of .01 was used.

RESULTS

Figure 1 provides an overview of the results. As expected, the criterion group had the highest comprehension scores on both passages. This top curve, then, serves as a ceiling for the four test groups. In other words, they have the potential of going as high as the ceiling, but cannot go higher. In the opposite direction, a zero comprehension score is possible.

INSERT FIGURE 1 ABOUT HERE

Two interesting patterns can immediately be seen in Figure 1. All three of the groups with Hi Prior Familiarity with evangelical/ religious content (represented by broken lines) had higher comprehension scores on the Theodore Epp sermon than on the Billy Graham sermon. All three curves have positive slopes. By contrast, the curves for the two Lo Prior Familiarity groups have moderately negative slopes. Both of

these groups scored lower on the Theodore Epp sermon than on the Billy Graham sermon.

It should be noted that the curves for the Lo Ed/Hi Prior Familiarity group (mean years of education = 7.9) and the Hi Ed/Lo Prior Familiarity group (mean years of education = 14.0) cross. This is very significant, because it indicates that, on some types of content, comprehension is more influenced by prior familiarity with that particular type of content than by one's formal education level.

Each of the predictor variables represented in hypotheses 1 through 7 was tested in a linear regression model against the unit vector. The following full and restricted models were used:

Full Model: $Y_1 = a_0U + a_1X_1 + E_1$

Restricted Model: $Y_1 = a_0U + E_2$

Where:

Y_1 = the criterion variable, comprehension

U = the unit vector

X_1 = the predictor variable being tested

E_1 and E_2 = the error terms for the two models

a_0 and a_1 = the least squares weighting coefficients calculated so as to minimize the sum of squared values in the error terms.

Results for Hypothesis 1: (Comprehension for the Hi Education Ss should be significantly higher than comprehension for the Lo Education Ss.) As Table 1 indicates, the education variable alone accounted for

INSERT TABLE 1 ABOUT HERE

.24 of the variance in comprehension. The F ratio between the full and restricted models was 61.29, and the p value was highly significant at less than .0000001. Therefore, hypothesis 1 was supported by the data.

Results for Hypothesis 2: (Comprehension for the Hi Prior Familiarity Ss should be significantly higher than comprehension for the Lo Prior Familiarity Ss.) Table 2 shows that Prior Familiarity accounted for

INSERT TABLE 2 ABOUT HERE

.26 of the variance in comprehension and produced an F ratio of 67.55 and a corresponding p value of less than .0000001. Therefore, hypothesis 2 was supported by the data.

Results for Hypothesis 3: (Comprehension on the Lo Idiosyncrasy sermon should be significantly higher than on the Hi Idiosyncrasy sermon.) This hypothesis was not supported by the data. Idiosyncrasy Level

INSERT TABLE 3 ABOUT HERE

accounted for only .01 of the variance in comprehension. The F ratio was 3.45, and the corresponding p value was less than .03.

Results for Hypothesis 4: (The multiplicative effect of Education Level X Prior Familiarity Level should be positively and significantly related to comprehension.) Table 4 presents the results of this statis-

INSERT TABLE 4 ABOUT HERE

tical test. Education Level X Prior Familiarity Level accounted for .50 of the variance in comprehension and produced an F ratio of 194.84. The corresponding p value was less than .0000001. Therefore, hypothesis 4 was supported by the data.

Results for Hypothesis 5: (The multiplicative effect of Education Level X Idiosyncrasy Level should be positively and significantly related

INSERT TABLE 5 ABOUT HERE

to comprehension.) As Table 5 indicates, Education Level X Idiosyncrasy Level accounted for .05 of the variance in comprehension. The F ratio

was 11.28, and the corresponding p value was less than .0005. Thus, hypothesis 5 was supported by the data.

Results for Hypothesis 6: (The multiplicative effect of Prior Familiarity Level X Idiosyncrasy Level should be positively and significantly related to comprehension.) This hypothesis was not supported by

INSERT TABLE 6 ABOUT HERE

the data. The non-significant results are reported in Table 6.

Results for Hypothesis 7: (The multiplicative effect of Education Level X Prior Familiarity Level X Idiosyncrasy Level should be positively and significantly related to comprehension.) As Table 7 indicates, this

INSERT TABLE 7 ABOUT HERE

three-way interaction accounted for .13 of the variance in comprehension, producing an F ratio of 30.20 and a corresponding p value of less than .0000001. Therefore, hypothesis 7 was supported by the data.

DISCUSSION AND CONCLUSIONS

As was the case with the Lowry and Marr study,[15] the results of this study strongly support the position that the clozentropy procedure is both a sensitive and a valid measure of communication comprehension. More specifically, the results underscore the potential usefulness of clozentropy research in a number of international communication situations. Clozentropy appears to have great potential for helping the international communicator do a better job of matching his messages to his audience. Clozentropy can help him measure the comprehensibility level of his messages on the actual audiences in which he is interested. Furthermore, it can help him measure the comprehension of various sub-

populations within his overall international audience. This would seem to be especially important in instances of international communication involving content which is to some extent idiosyncratic.

The validity of the basic clozentropy procedure was supported by the findings in this study involving "main effects" for Education Level and Prior Familiarity Level. It was hypothesized that the Hi Education groups would have significantly higher comprehension scores than the Lo Education groups, and indeed this was the case. It was hypothesized that the Hi Prior Familiarity groups would have significantly higher comprehension scores than the Lo Prior Familiarity groups, and indeed this was the case. In addition, the validity of the basic clozentropy procedure was supported by the results of three of the four "interaction effects" hypotheses.

However, the "main effects" hypothesis for Idiosyncrasy Level was not supported; thus, the results did not support the validity of the basic clozentropy theory and method. This deserves some discussion. The basis for hypothesis 3 was that the Billy Graham sermon had fewer idiosyncratic religious terms than the Theodore Epp sermon. Thus, the Billy Graham sermon was defined as being the Lo Idiosyncrasy sermon, and the Theodore Epp sermon was defined as the Hi Idiosyncrasy sermon. However, the comprehension scores indicated that the two sermons were not significantly different on a "main effects" level of analysis. Additional post hoc analysis of the two sermons provides the probable explanation for this lack of significance. While the Theodore Epp sermon does indeed contain a greater number of idiosyncratic religious terms, the Billy Graham sermon contains a greater number of idiosyncratic non-

religious terms. Even though these terms in the Billy Graham sermon are not specifically religious terms, they are terms that are likely to be of relatively low familiarity to English speaking Filipinos. Some examples: final dictum; cosmonaut; materialistic; humanism; man-centered philosophy; sophisticated and civilized; dethrones; secularism; pendulum of history; degenerates into superstition; unbridled passion. Thus, the likely explanation for the lack of a significant difference between the comprehension scores for the two sermons is that the religious idiosyncrasy of the Theodore Epp passage was offset by a different kind (or kinds) of idiosyncrasy in the Billy Graham passage. In addition, the Billy Graham passage is somewhat more structurally difficult than the Theodore Epp passage. The mean number of words per sentence is higher ($\bar{X}$ = 17.52 vs. $\bar{X}$ = 16.65), and the mean number of syllables per word is higher ($\bar{X}$ = 1.57 vs. $\bar{X}$ = 1.33).

Given the above information concerning the two passages, then, the reason that hypotheses 3 and 6 were not supported by the data would seem rather straight-forward. If the idiosyncrasy differences between the two passages were more <u>of type than of level</u>, then no "main effects" results would be expected for hypothesis 3, and hypothesis 6 would have the effect of multiplying Prior Familiarity Level times a near zero amount of Idiosyncrasy Level, resulting in a near zero outcome.

Thus, the non-significant results for hypotheses 3 and 6 should not be considered a failure for the basic clozentropy theory and method. On the contrary, it produced non-significant differences where it now appears that the researchers should not have expected any differences in the first place.

Since clozentropy is such a new area of investigation, much additional research is needed. For example, to what extent would the results have been different if predictor variables other than Education Level, Prior Familiarity Level, and Idiosyncrasy Level had been used? How many different types of idiosyncrasy are there, and are some more important than others? To what extent are the results of this study trans-national or trans-cultural? To what extent are they trans-lingual? To what extent would the results have been different if, instead of international religious communications, the content consisted of international political communications, international advertising, or international newscasts on stations such as the Voice of America? These and many other related questions are worthy of future investigation.

In conclusion, the writers believe that the present study has established three important points. First, the overall results support the validity of the basic clozentropy theory and method as a measure of international communication comprehension. The only hypotheses which were not supported by the data involved the variable of Idiosyncrasy Level. Post hoc analysis of the two passages indicated that the likely explanation for hypotheses 3 and 6 not being supported by the data is that the two passages differed more in the <u>type</u> of idiosyncratic terms they contained than they did in the overall <u>amount</u> of idiosyncrasy.

Second, this study points out the importance to the international communicator of studying various international audience <u>sub-populations</u>, even when the international communication under consideration is monolingual. One wonders, for example how many important sub-populations

there are---from a comprehension standpoint---when the Voice of America broadcasts in Spanish to Latin America.

Third, this study emphasizes how important prior familiarity with idiosyncratic content is to the comprehension of that content. In other words, comprehension is to a significant extent content-specific. In some instances, prior familiarity is more important than formal education level. The international communicator cannot afford to ignore the prior content familiarity of his target audiences.

Many years ago, a wise man said, "Know thyself." Today, with the aid of clozentropy research, an international communicator is in a better position to know his messages, his target audiences, and the relationships between them.

FOOTNOTES

[1]Cf., Leonard W. Doob, "Goebbel's Principles of Propaganda," Public Opinion Quarterly, 14:419-442 (1950); Alexander L. George, "Prediction of Political Action by Means of Propaganda Analysis," Public Opinion Quarterly, 20:334-345 (1956); Frederick Charles Barghoorn, Soviet Foreign Propaganda, Princeton: Princeton University Press, 1964; Kai Wang and Kenneth Starck, "Red China's External Propaganda During Sino-U.S. Rapprochement," Journalism Quarterly, 49:674-678 (Winter 1972).

[2]Cf., M. R. Marks and W. L. Taylor, "A Methodological Study of the Effects of Propaganda," Journal of Social Psychology, 65:269-277 (1965); E. S. Lorimor and S. Watson Dunn, "Reference Groups, Congruity Theory and Cross-Cultural Persuasion," Journal of Communication, 18: 354-368 (December 1968); Don D. Smith, "Some Effects of Radio Moscow's North American Broadcasts," Public Opinion Quarterly, 34:539-551 (Winter 1970-71).

[3]Cf., International Press Institute, The Flow of the News, Zurich: IPI, 1953; John T. McNelly, "Intermediary Communicators in the International Flow of News," Journalism Quarterly, 36:23-26 (1959); Jim A. Hart, "The Flow of International News Into Ohio," Journalism Quarterly, 38:541-543 (1961); Rhoda Metraux, "International Communication of Science Information," Journalism Quarterly, 40:332-338 (Summer 1963); Karl Erik Rosengren, "International News: Time and Type of Report," in Heinz-Dietrick Fischer and John C. Merrill (eds.), International Communication: Media, Channels, Functions, New York: Hastings House, 1970, pp. 74-80.

[4]Donald K. Darnell, "Clozentropy: A Procedure for Testing English Language Proficiency of Foreign Students," Speech Monographs, 37:36-46 (1970).

[5]Wilson L. Taylor, "'Cloze' Readability Scores as Indices of Individual Differences in Comprehension and Aptitude," Journal of Applied Psychology, 41:19-26 (1957).

[6]Claude E. Shannon and Warren Weaver, The Mathematical Theory of Communication, Urbana: University of Illinois Press, 1949.

[7]Darnell, op. cit., p. 36.

[8]Taylor, op. cit., p. 19.

[9]Richard R. Reilly, "A Note on 'Clozentropy: A Procedure for Testing English Language Proficiency of Foreign Students'," Speech Monographs, 38:350-353 (1971).

[10]Ibid., p. 351.

[11]Patrick R. Connolly and William E. Knabe, "Assessing Inter-group Differences in the Use of Language: A Method and a Case Study," Central States Speech Journal, 14:43-47 (1973).

[12]Dennis T. Lowry and Theodore J. Marr, "A Two-Culture Validation Study of Clozentropy as a Measure of Intercultural Communication Comprehension," presented at the annual convention of the International Communication Association, New Orleans, April 17-20, 1974.

[13]Connolly and Knabe, op. cit., p. 46.

[14]Note: Idiosyncrasy Level was re-scored (Hi changed to Lo, Lo changed to Hi), so that this hypothesis and the following hypotheses could be stated in a positive form. This re-scoring in no way changes any of the statistical results. It simply makes it easier to state the

research hypotheses.

[15]Lowry and Marr, op. cit.

FIGURE 1

Mean Comprehension (T) Scores of the American Criterion Group and Four Test Groups of Filipinos on Sermon Passages from Two Different Radio Preachers

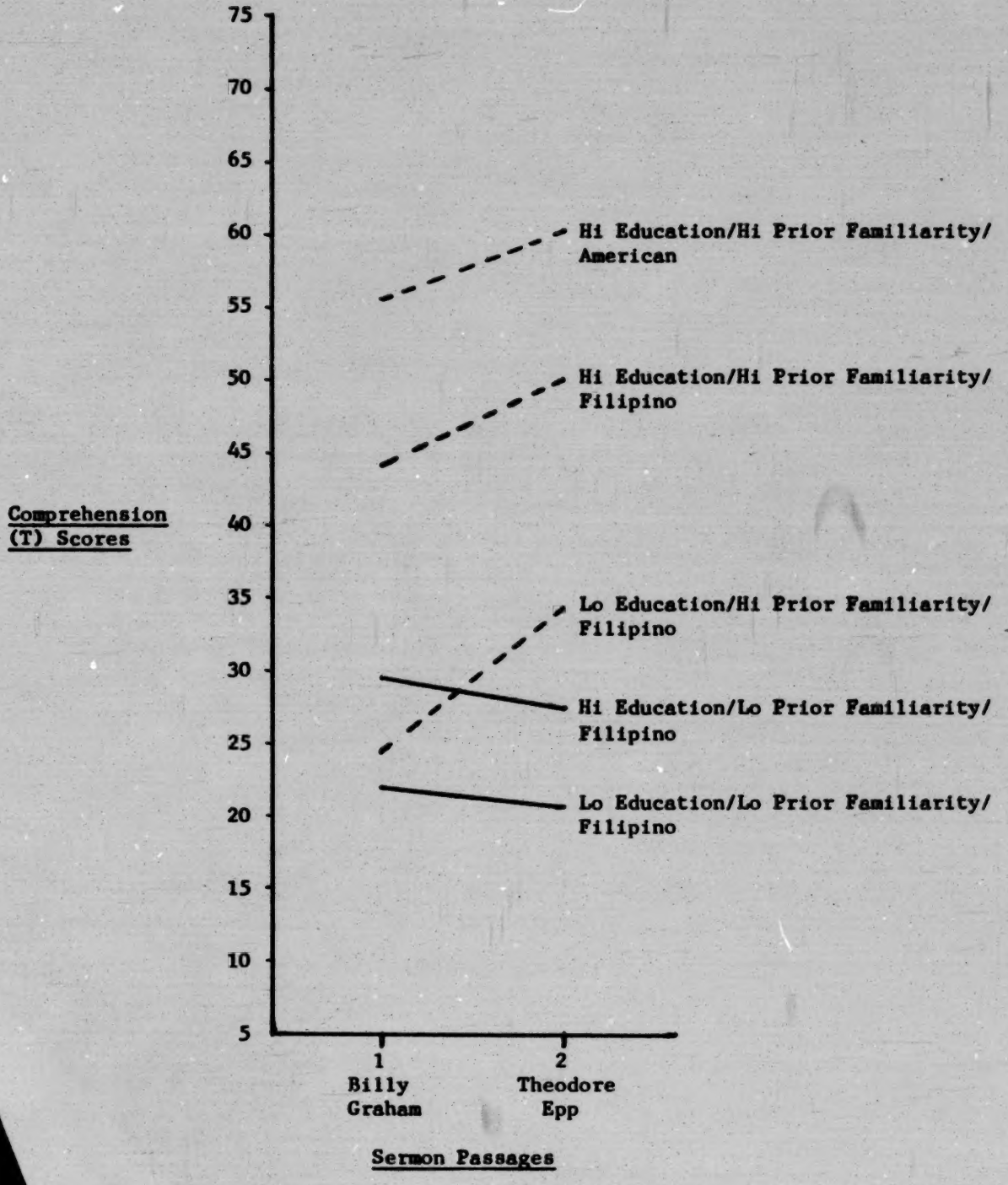

TABLE 1

Education Level as the Predictor Variable, Comprehension as the Criterion Variable

R^2	df	F	p<
0.24	1, 190	61.29	.0000001

TABLE 2

Prior Familiarity Level as the Predictor Variable, Comprehension as the Criterion Variable

R^2	df	F	p<
0.26	1, 190	67.55	.0000001

TABLE 3

Idiosyncrasy Level as the Predictor Variable, Comprehension as the Criterion Variable

R^2	df	F	p<
0.01	1, 190	3.45	.03

TABLE 4

Education Level X Prior Familiarity Level as the Predictor Variable, Comprehension as the Criterion Variable

R^2	df	F	p<
0.50	1, 190	194.84	.0000001

TABLE 5

Education Level X Idiosyncrasy Level as the Predictor Variable, Comprehension as the Criterion Variable

R^2	df	F	p<
0.05	1, 190	11.28	.0005

TABLE 6

Prior Familiarity Level X Idiosyncrasy Level as the Predictor Variable, Comprehension as the Criterion Variable

R^2	df	F	p<
0.01	1, 190	2.05	.07

TABLE 7

Education Level X Prior Familiarity Level X Idiosyncrasy Level as the Predictor Variable, Comprehension as the Criterion Variable

R^2	df	F	p<
0.13	1, 190	30.20	.0000001